# Effect of Financial Sector Development on Economic Growth: A Case of Nigeria

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# Effect of Financial Sector Development on Economic Growth: A Case of Nigeria

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**Abstract**
We investigate the effect of financial sector development on the economic growth of Nigeria with secondary data covering the period 1981 to 2013. This study is anchored on the need to fill the gap occasioned by the dearth of literature on this subject-matter, especially as it concerns Nigeria. We employ the Dickey Fuller unit root test to confirm the stationarity of the variables involved and ordinary least squares technique to determine the extent to which other variables impact on economic growth. The multiple regression results show that money supply, minimum rediscount rate and exchange rate have positive and insignificant effect on economic growth. On the other hand, banking sector credit, credit to the private sector, market capitalization and foreign direct investment discovered to be having negative and insignificant effect on economic growth. The study recommends that governments should evolve policies in favour of making the financial sector of their economies more efficient.
**Keywords:** Economic Growth, Nigeria, Banking Sector Credit, Money Supply, Marginal Rediscount Rate, Market Capitalization, Exchange Rate, Foreign Direct Investment.

## 1.0 Introduction
The financial sector all over the world, especially those in developing countries, play some vital roles in financing their countries' economic projects and activities as an attempt to ensure sustainable economic growth. According to Shaw (1973), financial or credit development has the potential of bringing about some economic growth. It achieves this objective by raising savings, improving the efficiency of loanable funds and making way for capital accumulation. Agada (2010), opines that the availability of credit enables firms to increase production output and efficiency - a situation which has a 'multiplier' effect on the profitability of banks through the interest earned by them. Banking sector credits have a positive role in a country's economic growth as various economic agents obtain them to meet their operational expenses (Nwanyanwu, 2008). For Adamu (2000), the provision of credit is a means of achieving economic growth through self-employment opportunities. Adamu (2000) further explains that credit can be used to save an economic activity from collapsing totally, should there arise some unforeseen threatening circumstances. The debate on the interventionary role of the financial sector in economic development has occasioned many discussions in literature. There is seemingly a consensus among researchers that the role played by this sector banks helps significantly in boosting economic growth and economic development. Akintola (2004) views banks' traditional roles as including agricultural and manufacturing financing as well as syndication of credit to the productive sectors of the economy. Akintola (2004) opines that the efficient exercise of those roles will boost economic growth in the same proportion. It is evident that the Central Bank of Nigeria (CBN) plays a leading and catalytic role as far as credit advancement is concerned. The CBN uses direct control to influence both the overall credit expansion and to determine the proportion of bank loans and advances allocated to high priority sectors and others (Akpansung and Babalola, 2009). Driscoll, (2004) and Jayaraine and Strahan (1996) both posit that financial development can bring about economic growth by raising savings, improving allocative efficiency of loanable funds and promoting capital accumulation. Well-developed financial markets are necessary for overall economic advancement of the less developed and emerging economies (Jayaratne and Straham, 1996).

The choice to study the effect of the financial sector development on Nigeria's economic growth is occasioned by a number of reasons, namely: (i) The studies carried out so far on the impact of various types of credit on Nigeria's economic growth are relatively few; (ii) The relationship between financial sector development and economic growth has been regarded as an important goal of economic policy; yet such studies appear to have suffered some neglect. (iii) A lot of research work has been dedicated to explaining how this goal can be achieved; yet such concerted efforts in both researches and policies do not seem to have yielded meaningful results. This research work is anchored on the need to fill the knowledge gap caused by the paucity of literature on this topic, especially as it concerns emerging economies like Nigeria. The cardinal objective of this paper, therefore, is to evaluate the impact of financial sector on Nigeria's economic growth. The second section of this paper presents the literature review. Section three discusses the research methodology, while sections four and five concern the discussion of findings, conclusion and recommendations.

## 2.0 Literature Review
## 2.1 Conceptual and Theoretical Underpinnings
### 2.1.1 Financial Intermediation

Financial intermediation implies the act of channeling funds from the net savers, who have idle funds, to the investors or borrowers who need those funds. Melicher and Norton (2011:50) define financial intermediation as the process by which savings are pulled together in depository institutions and subsequently lent out or invested elsewhere. Schumpeter (1991) in King and Levin (1993) assert that the services provided by financial intermediaries are essential technological innovations and economic development. Those services include savings mobilization, project evaluation, risk management and transaction facilitation. The performance of those specialized tasks aside, several theoretical models postulate that the financial intermediaries also help to mitigate the cost associated with information acquisition and the conduct of transactions. According to Afolabi (1998:260), what has necessitated the existence of financial intermediation is the fact that, on their own, the lenders and the borrowers cannot come into direct contact. Another justification for financial intermediation is the existence of surplus and deficit sectors. Credit is viewed as an important aspect of financial intermediation which makes funds available to those economic entities that can use them most productively. Shaw (1973), Greenwood and Jovanovich (1990), and Bencivenga and Smith (1991) all emphasize the role of financial intermediation in boosting economic growth. They contend that if the matching of lenders with savings to borrowers who need the money through an agent or third party, is successful, the lender obtains a positive rate of return. The borrower receives some returns for risk taking while the financial intermediary receives some reward for making a successful match. Jaffe and Russel (1976) provide a theoretical model. Stiglitz and Weiss (1981) also have their own model. Both researches are considered as containing the current theories of financial intermediation. The theory of Jaffe and Russel (1976), is wrapped up with the postulation that, because of the existence of asymmetric information, high quality borrowers would prefer some rationing if the smaller loan sizes lower the market average default probabilities. When that happens, the premium is reduced. On their own part, Stiglitz and Weiss (1981) create a model of bank credit rationing where some borrowers receive loans while others do not. The assumption is that interest rates directly affect the quality of loans because of some adverse selection or the effects of moral hazard. They maintain that it is possible to avert the effects of adverse selection and moral hazard. The two scholars assert that banks have an incentive in some circumstances to ration credit instead of making demand for loanable funds.

### 2.1.2 Banking Sector

The banking sector includes monetary authorities and deposit money banks as well as other banking institutions that do not accept transferable deposits but do incur such liabilities as time and savings deposits. This sector is viewed as the only financial means of attracting savings on a large scale which is further extended to borrowers as credit. According to Nwanyanwu (2008), the banking sector helps to make credits available by mobilizing surplus funds from the savers, who do not have immediate need for them. It channeling them, in the form of credits, to the investors who have good ideas on how to create some additional wealth in the economy but lack the necessary capital to make use of those ideas.

### 2.1.3 Economic Growth

Economic growth has been defined by Baye and Jansen (2006) as the rate of change in real output. It is usually stated as the percentage of change on annual basis. According to Aretis, et al (2007), economic growth has to do with the expansion of real output per capita (per worker) over time. Riley (2000) views economic growth as depending on some factors in the long-run. Those factors include: (i) the growth of the nation's stock of capital, (ii) the entrepreneurial ability of human resources, (iii) the trend rate growth of the productivity of labour and capital, and (iv) technological improvements. Growth models are numerous in literature. Yet, there is apparently no consensus as to which strategy will achieve the best results. Some of the existing growth models include the Two-gap Model, Maximum Theory, Schumpeterian Theory, Harold Domar Theory of growth, Neo-classical Model of Growth, and the Endogenous Growth Theory. The neo-classical growth model is an economic theory which outlines how a steady economic growth rate will be achieved with the optimal level of each of three driving forces – labour, capital and technology (Ray, 1998). According to Ray (1998), the neo-classical growth theory states that, by varying the amounts of labour and capital in the production function, an equilibrium position can be attained. For Ray (1998), when a new technology becomes available, it will be necessary to adjust labour and capital to maintain growth equilibrium. Jhingan (2006) postulates that endogenous growth model emphasizes technical progress which results from the state of investment, the size of capital stock and the stock of human capital. This theory states that it is possible for policy measures to impact on the long-term growth rate of an economy. According to the theory, and as propounded by the neo-classical school of thought, long-term growth rate is determined by variables within and not by an exogenous rate of technological progress. This study has a greater sympathy for the neo-classical growth model and the endogenous growth theory because both of them are considered as explaining the situation in developing economies such as Nigeria most lucidly.

### 2.1.4 Financial sector

The financial sector refers to the part of the entire economy which primarily comprises money markets, banking

institutions and brokers. It is a very important sector in most large and highly developed countries.

### 2.1.5 Financial sector development

Financial sector development occurs when financial instruments, markets and intermediaries work in tandem to reduce the costs related to information, enforcement and transactions. Nnanna, Englama and Odoko (2004) postulate that financial development is capable of affecting growth in three ways, viz: (i) by raising the efficiency of financial intermediation, (ii) by increasing the social marginal productivity of capital, and (iii) by influencing the private savings rate. The implication of this observation is that a financial institution can impact on economic growth by carrying out their functions efficiently; one of those functions is the provision of credit.

### 2.1.6 Credit

The term 'credit' is defined as the extension of money from the lender to the borrower. According to Spencer (1977), credit implies a promise by one party to pay another for money borrowed or goods and services received. The duty of managing credit cannot be extricated from the banking industry because banks serve as a conduit for funds to be received in the form of deposits from the surplus units of the economy. Those funds are passed on by banks to the deficit units who need them for productive and other purposes. The Central Bank of Nigeria Brief (2003) defines bank credit as the amount of loans and advances given by the banking sector to the various economic agents. The Central Bank of Nigeria (CBN) Monetary Policy Circular (2010) identifies such bank credits as comprising loans and advances, commercial papers, bankers' acceptance and bills discounted. Bank credit is usually accompanied with some collateral that helps to ensure the repayment of loan in the event of default

### 2.2 Empirical Review

#### 2.2.1 Bank credit and the economic growth: Evidence from previous research studies.

A collection of literature exists regarding the contribution of the banking sector to economic growth. However, no consensus has been arrived yet on the actual impact of relevant explanatory variables on economic growth (Thompson and Allen, 2011; Wei and Song, 2009; Balogun, 2007; Agada, 2010; Nwanyanwu, 2008; Tuuli, 2002; King and Levine, 1993; Gross, 2001). A study was conducted by Wei and Sung (2009) which was aimed at ascertaining the impact of commercial bank credit on the economic growth of South Korea. Using the ordinary least squares regression technique, Domestic credit and gross domestic product were introduced as proxies for independent and dependent variables, respectively. The result of the study was that aggregate credit impacts positively on the South Korean economic growth. Thompson and Allen (2011) conducted a research aimed at examining the trends as well as the efforts of government spending on the growth rate of real gross domestic product in India, using econometric model with ordinary least squares technique. The finding was that there is a positive relationship between real GDP and the recurrent and capital expenditures of government. In a similar study, Abu Bader and Abu-Qarn (2008) focused on examining the causal relationship between financial development and economic growth for six Middle East and North African countries, including Algeria, Egypt, Israel, Morocco, Syria and Tunisia. The study was carried out using some vector auto-regressive framework. Four different measures of financial development were employed while the augmented vector auto regression (VAR) methodology was applied to test the granger-causality among the variables. The empirical results strongly supported the hypothesis that financial development granger causes economic growth in five out of the six countries. In Israel, however, there was observed some weak support for the causality relationship of economic growth and financial development. In a similar study, Ghali (1999) discovers that financial deepening promotes economic growth. Nwanyanwu (2008) observes that bank credit does not impact significantly on Nigeria's economic growth but appears important to lead economic growth. It was the observation of Gross (2001) that economic growth does not take place as a result of exogenous reasons but through some appropriate government policy on the financial market. Guray, et al (2007) assert that, though positive, the effect of financial development on economic growth is insignificant. According to Fadare (2010), credit to the private sector, interest rate margin, parallel market premiums, inflation rate lagged by one year, size of the banking sector capital and cash reserve ratios account for a very high proportion of the change in Nigeria's economic growth. He postulates that although there is a strong and positive relationship between economic growth and other exogenous variables, interest rate margins, banking sector credit to the private sector, parallel market premiums, inflation rate and cash reserve ratio, all disclose the wrong signs. The implication of the wrong signs which emerged from the empirical results is that theoretical expectations would be valid only when all conditions are normal. Bayraktar and Wang (2006) observe that banking sector's openness has a direct and indirect effect on economic growth. This happens through a combination of improvements in access to financial services and the efficiency of the financial intermediaries. Both of them occasion a lowering of the cost of financing which, in turn, stimulates capital accumulation and economic growth (Bayraktar and Wang, 2006). Economic literature is filled up with possible qualitative and quantitative explanatory variables that can influence the growth rate per capita output over time. Tuuli (2002) for example, used the ratio of bank claims to GDP, annual consumer price index and interest rate margin to analyze the relationship between finance and economic growth. The model specified by Balogun (2007) was more expansive as it included money supply, minimum rediscount rate, private sector credit, ratio of banking sector

credit to the government spending, ratio of stock market capitalization to credit to the private sector and exchange rate.

Many empirical studies have investigated the existing relationship between financial sector development and economic growth. Beck (2006), Demetriades and Adrianova (2004) and Levine (2003) built on the works carried out by Goldsmith (1969), Gurley and Shaw (1955), Schumpeter (1912), Shaw (1973), Hicks (1969) and McKinnon (1973), while investigating the relationship between the two variables. Their attempt was to use cross-country, panel industry-level and case study analyses to demonstrate how financial development boost economic growth. According to Acemoglu, et al (2004) and Beck, et al (2000), developed financial markets are essential for long–term economic growth. While Goldsmith (1969), King and Levin (2003), McKinnon (1973), Odedokin (1996), Schumpeter (1912) and Shaw (1973) view finance as a critical element of growth, Lucas (1998) and Stern (1984) look upon finance as a relatively unimportant growth factor. Buffle (1984) and Van Wijinbergen (1983) were concerned with focusing on the potential negative effect of finance on economic growth. The view of Xu (2000) is rather parallel in the sense that it does not see financial development as playing any role (positive or negative) on economic growth. In Nigeria, Adebiyi (2005) looked into the relationship between stock market indicators, such as turnover to GDP and market capitalization to GDP and economic growth, with the aid of co-integration approach. The findings of the study demonstrate that size and liquidity (parameters of capital market development) are statistically significant in explaining economic activity. On his part, Ajakaiye (2002) investigated the impact of banking sector credits to the private sector on real investment in Nigeria from 1981 to 1995. At the end, the study discovered that bank credit to private sector has a positive impact on real investment. Afolabi (1996), while using the buffer-stock approach, investigated the impact of the movement of monetary aggregates on the real sector via its effects on real consumer expenditures from 1970 to 1995. A weak relationship between the rate of interest and movements of monetary aggregates and investment expenditure was found by the study. Other such studies on the empirical relationship between financial sector development and economic growth in Nigeria include the works by Ariyo and Delegan (2005) and Balogun (2007).

In summary, there is a consensus among researchers that the financial sector development contributes to economic growth. However, the findings from the empirical studies carried out in the past tend to suggest a lack of consensus among them on the direction, and at what level, of statistical significance that each financial sector variable affects economic growth. The results are more or less country- specific.

## 3.0    Research Methodology
### 3.1    Research design
This study employs the ex post facto research design as it relies completely on historical data. The secondary data are extracted from the Central Bank of Nigeria's annual reports and statistical bulletins, International Monetary Fund's World Economic Outlook International Statistics and Balance of Payment database, International Debt Statistics, World Bank and Organization of Economic Cooperation and Development (OECD)'s Estimates published during the coverage period, etc. The data used cover the period between 1981 and 2014, a period when Nigeria experienced pre and post-structural adjustment programme, banking deregulation and banking crisis, global economic meltdown and economic instability. Essentially, journals are extensively used while other published works and online materials that are deemed valid and relevant to the study are also consulted with regard to methodology. King and Levine (1993) employed a cross-country regression and other statistical tests in their cross-country time-series survey of eight countries while trying to establish the relationship between financial development and economic growth. In a similar study, Rayan and Zingales (1998) designed multiple regression models for the purpose of analysis. Odhiambo (2008) carried out a similar research to find out the impact of financial depth on the economic growth of Kenya by adopting two econometric techniques - the dynamic tri-variate granger test and the error correction model (ECM). In line with the methodology used by previous studies on this topic, we use multiple regression analysis to find out the long-run relationship between the variables. Specifically, it borrows its analytical model from that of Ali Uyar (2009). For the purpose of this study the researchers make use of eight variables only, namely, Real per capita Gross Domestic Product Growth Rate (GDPGR), Banking Sector Credit (BSC), Ratio of Money Supply to Gross Domestic Product at current prices (M2/GDP), Ratio of Credit to Private Sector to Gross Domestic Product at current prices (CPS/GDP), Ratio of Market Capitalization of stocks to Credit to the Private Sector (MC/CPS), Marginal Rediscount Rate (MRR), Exchange Rate of Naira to the US dollar (EXR), and Foreign Direct Investment (as a percentage of GDP). Consequently, the economic growth function of Nigeria is described in the following manner:
GDPGR = f (BSC, M2/GDP CPS/GDP, MC/CPS, EXR. FDI, MRR).

### 3.2    Model Specification
The basic model is: $Y_{it} = \beta_0 + \beta X_{it} + \varepsilon_{it}$, where the subscript i denotes the cross-sectional dimension and t represents the time-series dimension. $Y_{it}$ represents the dependent variable in the model which is GDPGR. $X_{it}$ contains a set of explanatory variables in the estimation model. $\beta_0$ is the constant (intercept), while $\beta$ stands for the coefficients

(the slopes). After specifying the function in linear form with an addition of the error term, the model is specified in the following manner: $GDPGR_{it} = \beta_0 + \beta_1 (BSC_{it}) + \beta_2 (M_2/GDP_{it}) + \beta_3 (CPS/GDP_{it}) + \beta_4 (MC/CPS_{it}) + \beta_5 (MRR_{it}) + \beta_6 (EXR_{it}) + \beta_7 (FDI_{it}) + \varepsilon_{it}$

### 3.3    Hypotheses
The following hypotheses are postulated to define the research criterion:
$H0_1$: Banking sector credit has no significant effect on economic growth.
$H0_2$: Money supply has no significant effect on economic growth.
$H0_3$: Credit to the private factor has no significant effect on   economic growth.
$H0_4$: Market capitalization has no significant effect on economic growth.
$H0_5$: Marginal rediscount Rate has no significant effect on economic growth.
$H0_6$: Exchange rate has no significant effect on economic growth.
$H0_7$: Foreign direct investment has no significant effect on economic growth.
The entire population of the data for the variables are used as sample for the study.

### 3.4    Variables Measurement
The description of the measures used for the research variables is presented as follows:
i.      GDPGR: This is the growth rate of the ratio of GDP to the country's total population. It refers to the GDP per Capita which is also called per capita income. In keeping with the standard practice, the growth of the real GDP is used as proxy for economic growth. To eliminate the distorting effect of inflation on the price of goods produced, GDP is calculated in real terms.
ii.     BSC: This stands for the domestic credit provided by the banking sector in Nigeria. It includes all credits to the various sectors of the economy on a gross basis, with the exception of the credit to the Federal Government-which is net.
iii.    $M_2$/GDP: This ratio is one of the two alternative indicators of financial market sophistication. It captures the total liquid liabilities of the financial system by broadly including key financial institutions. According to Alfaro, et al (2004), it is an encompassing measure of the overall size of the financial system. It was also used as a variable in the studies of Kolawole (n.d) and Alfaro, et al (2004).
iv.     CPS/GDP: This ratio is an alternative indicator of financial market sophistication/ deepening. Along with M2/GDP, it is used to capture the diversity of opinions on the precise definition of financial sector development. This indicator distinguishes between the end users of the claims of the financial intermediaries as it includes only the claims of the private sector.
v.      MC/CPS: This stands for the ratio of market capitalization to credit to private sector. Market capitalization is one of the capital market variables used to measure the relationship between the capital market and economic growth. The study of Kolapo and Adaramola (2012) asserts that capital market has a positive impact on Nigeria's economic growth.
vi.     MRR: The bias and incentives which are created in favour of holding public debt instruments and/or recourse to rediscount facilities are usually presumed to be embodied in treasury bills and / or minimum rediscount rate (MRR) (Balogun, 2007). In this study, MRR is introduced as an independent variable. It is considered to be a better measure of the interest rate policy because it is the benchmark rate which is often determined by the monetary authorities as a part of their interest rate operating procedures. It is regarded as the compass-rate that steers all other interest rates. Some good examples of the items that MRR steers are treasury bills rate and the rates on special monetary authority's certificates which are issued as instruments of indirect monetary control.
vii.    EXR: The exchange rate variable is measured in terms of local currency (naira) per US dollar in order to reflect appropriately the direction of change which devaluation implies and its increasing effects on domestic consumer prices. It was also introduced as a variable in Balogun (2007).
viii.   FDI: Foreign Direct Investment refers to the net inflows of investment to acquire lasting management interest (10 percent or more of voting stock) in an enterprise which operates in an economy other than that of its investor. It is the sum of the equity capital, investment of earnings, other long-term capital and short term-capital as shown in the balance of payments. It represents the net outflows of investment from the reporting economy to the rest of the world. It is presented as a percentage of GDP. Dritsakis (n.d) who introduced FDI as an explanatory variable observes that it has a unidirectional relationship with economic growth. Shiro (n.d) has a similar finding with Dritsakis (n.d).

## 4.0 Discussion of Results

### 4.1 Descriptive Statistics

**Table 1: Descriptive Statistics**

| | GDPGR | LogBSC | $M_2$/GDP | CPS/GDP | MC/CPS | MRR | EXR | FDI |
|---|---|---|---|---|---|---|---|---|
| Mean | 4.78 | 25.97 | 17.11 | 12.41 | 0.93 | 12.76 | 65.21 | 3.01 |
| Median | 5.98 | 21.90 | 16.50 | 10.70 | 0.77 | 13.00 | 21.89 | 2.89 |
| Maximum | 21.18 | 48.70 | 38.00 | 36.70 | 3.59 | 20.00 | 157.50 | 8.28 |
| Minimum | -10.75 | 4.90 | 8.60 | 5.90 | 0.37 | 6.00 | 0.61 | 0.00 |
| Standard deviation | 6.74 | 12.34 | 5.99 | 6.49 | 0.65 | 3.77 | 62.68 | 1.95 |
| Skewness | 0.15 | 0.43 | 1.72 | 2.14 | 2.45 | 0.08 | 0.27 | 0.89 |
| Kurtosis | 3.94 | 2.14 | 6.83 | 7.87 | 9.98 | 2.28 | 1.27 | 3.91 |
| Jarque Bera | 1.32 | 2.02 | 36.36 | 57.81 | 100.01 | 0.75 | 4.53 | 5.47 |
| Probability | 0.52 | 0.36 | 0.00 | 0.00 | 0.00 | 0.69 | 0.10 | 0.06 |
| Observation | 33.00 | 33.00 | 33.00 | 33.00 | 33.00 | 33.00 | 33.00 | 33.00 |

Source: Researchers' E-View

As indicated in table 1, the mean of gross domestic product growth rate within the period of this study is 4.8, while the median is 5.98. Nigeria's gross Domestic product growth rate was highest in 2012 when the rate was 21.18, while the year with the lowest growth rate was 1987 when it was -10.75. As revealed by the skewness of GDPGR, it has a positive skewness of 0.15. This indicates that the degree of departure from the mean of the distribution is positive. The implication is that, on the whole, there is a consistent increase in GDPGR from 1981 to 2013. The kurtosis is 3.94. Since this is greater than 3, the normal/standard value, the implication is that the degree of peakedness within the period under study is normally distributed since as most of the values cluster around the mean. The standard deviation of 6.74 shows that its values are widely dispersed around the mean. The mean of the log of Banking Sector Credit is 25.97. Banking Sector Credit (BSC) was highest in 1986 when its value was 48.7, while 2006 had the lowest value of 4.9. As revealed by the table of BSC, it has a positive skewness of 0.43. This indicates that the degree of departure from the mean of the distribution is positive. Owing to the fact that the kurtosis is 2.14, which is less than the normal value, the implication is that the degree of peakedness within the period of study is not normally distributed. Most of the values are moving away from the mean. Its standard deviation, which is 5.99, also shows that its values are widely dispersed around the mean. The mean of $M_2$/GDP during the period of study is 17.11, while the median is 16.50. Its value was highest in 2009 and lowest in 1996 when it was 38.00 and 8.6 respectively. M2/GDP has a positive skewness of 1.72, the implication being that, on the whole, there is a consistent increase of $M_2$/GDP from 1981 to 2013. As indicated by the kurtosis which is 6.83, the degree of peakedness within the period of this study is normally distributed as most of the values clustered around the mean. Its standard deviation, which is 5.99, shows that its values are widely dispersed. For CPS/GDP, its mean within the period of this study is 12.41 while its median is 10.70. Its value is highest in 2009 and lowest in 1996 when its growth rate was 36.70 and 5.90 respectively. It witnessed a positive skewness of 2.14; hence, the degree of departure from the mean of the distribution is positive. The implication is that there is a consistent increase in CPS/GDP from 1981 to 2013. The kurtosis is 7.87, implying that the degree of peakedness within the period under study is normally distributed as most of the values clustered around the mean. Its standard deviation of 6.49 implies that its values are widely dispersed. MC/CPS has a mean value of 0.93 and a median of 0.77. It has skewness of 2.45. This shows that the degree of departure from the mean is positive during the period of study, MC/CPS was highest in 2007 at 3.59 and lowest in 1993 at 0.37. The kurtosis is 9.98, This normal value indicates that the degree of peakedness is normally distributed as most of the values cluster around the mean. Its standard deviation of 0.65 shows that the values are not widely dispersed. MRR has mean and median of 0.93 and 0.77 respectively. It was highest in 1993 at 20.00 and lowest in 2007 at 0.37, its skewness of 2.45 indicates that the degree of departure from the mean of the distribution is positive. The kurtosis of 2.28 indicates that the degree of peakedness within the period of study is not normally distributed as most of its values are moving away from the mean. Its standard deviation of 3.77 shows that its values are widely dispersed around the mean. For EXR, the mean is 65.21, while its median is 21.81. EXR was highest in 2012 and lowest in 1981 when its values were 157.50 and 0.6 respectively. It has a positive skewness of 0.27, implying that the degree of departure from the mean of the distribution is positive. However, its kurtosis is 1.27, a figure below the normally level of 3. This implies that the degree of peakedness within the period of this study is not normally distributed as most of its values are moving away from the mean. Its standard deviation of 62.68 shows that its values are extremely widely dispersed. In the case of FDI, its mean within the period is 3.01 while its median is 2.89. FDI was highest in 1994 when the value was 8.28. it had a positive skewness of 0.89. This shows that the degree of departure from the mean of the distribution is positive and consequently that there is a consistent increase of FDI from 1981 to 2013. The kurtosis of 3.91 shows that the degree of peakedness within the period of this study is normally distributed around the mean. Its standard deviation of 1.95 shows that is values are moderately distributed around the mean value.

### 4.2 Augmented Dickey-Fuller Unit Root Test

Carrying out a regression analysis on non-stationary time series data will lead to spurious regression results. To guard against this likely problem of spurious regression, the widely used Augmented Dickey Fuller (ADF) test (Dickey and Fuller, 1979) is employed to ascertain the stationarity of the data as follows:

**Table 2: Unit Root Test**

| ADF Test Statistics | -3,346811 | |
|---|---|---|
| | 1% Critical Value | -3.6576 |
| | 5% Critical Value | -2.9591 |
| | 10% Critical Value | -2.6181 |

McKinnon Critical values for rejection of hypothesis of a unit root.

Augmented Dickey-Fuller Test Equation

Defendant variable: D (GDPGR)

Method: Least Squares

Sample (adjusted): 1982-2013

Included observations: 31 after adjusting end prints.

| Variable | Coefficient | Std Error | T-Statistics | Prob |
|---|---|---|---|---|
| GDPGR(-1) | -0.669352 | 0.199997 | -3.346811 | 0.0023 |
| D (GDPGR(-1) | 0.114369 | 0.159934 | 0.715104 | 0.4805 |
| C | 3.110383 | 1.368823 | 2.272304 | 0.0309 |

| R-Squared | 0.314344 0.233968 | Mean Depended Var. |
|---|---|---|
| Adjusted R-Squared | 0.265369 6.781681 | S.D. Dependent Var. |
| S.E. of regression | 5.812628 6.449708 | Akaike Info. Criterion |
| Sum Squared Resid. | 946.0262 6.588481 | Schwarz Criterion |
| Log likelihood | -96.97048 6.418405 | F-Statistic |
| Durbin-Watsan Stat. | 2.106805 0.005076 | Prob. (F-Statistic) |

Source: Researcher's E-View.

The result of the unit root test (table 2) reveals that there was the presence of stationarity at both 5% and 10% critical values. To confirm the reliability of this result, the Durbin Watson statistic (2.059187) is very significant. This also implies that there is no trace of auto correlation problem in the time series data.

### 4.3 Pearson Moment Correlation Analysis

**Table 3: Correlation Matrix**

| | GD PGR | BSC | M$_2$/GDP | CPS/GDP | MC/CPS | MRR | EXR | FDI |
|---|---|---|---|---|---|---|---|---|
| GDPGR | 1.000 | | | | | | | |
| BSC | -0.431 | 1.000 | | | | | | |
| M2/GDP | 0.196 | 0.110 | 1.000 | | | | | |
| CPS/GDP | 0.146 | 0.071 | 0.933 | 1.000 | | | | |
| MC/CPS | 0.222 | -0.541 | 0.356 | 0.264 | 1.000 | | | |
| MRR | 0.075 | -0.296 | -0.447 | -0.453 | -0.167 | 1.000 | | |
| EXR | 0.410 | -0.542 | 0.610 | 0.633 | 0.569 | -0.110 | 1.000 | |
| FDI | -0.009 | -0.114 | 0.027 | 0.009 | 0.043 | 0.368 | -0.034 | 1.000 |

Source: Researchers' E-View.

    As revealed by table 3, GDPGR has a negative relationship with BSC and FDI. This implies that as GDPGR increases, each of the other variables increases. BSC is positively correlated with M2/GDP and CPS/GDP but has negative correlation with MC/CPS, MRR, EXR and FDI. M2/GDP has a positive correlation with CPS/GDP, MC/CPS, EXR and FDI but is negatively correlated with MRR. CPS/GDP has a positive relationship with MC/CPS, EXR and FDI. MC/CPS has a negative correlation with EXR and FDI. While MRR is negatively correlated with EXR, its relationship with FDI is positive. EXR, on the other hand, has a negative relationship with FDI.

## 4.4 Granger Causality Tests
**Table 4: Granger Causality Test**

Pairwise Granger Causality Tests

Sample: 1981 – 2013.

Lags: 1

| Null Hypothesis | Obs. | F-Statistic | Probability |
|---|---|---|---|
| BSC does not Granger cause      GDPGR | 32 | 6.16778 | 0.01904 |
| GDPGR does not Granger cause BSC | | 0.06111 | 0.80649 |
| M2/GDP does not Granger cause GDPGR | 32 | 1.15436 | 0.29150 |
| GDPGR does not Granger cause M2/GDP | | 0.65957 | 0.42333 |
| CPS/GDP does not Granger cause GDPGR | 32 | 1.24535 | 0.27361 |
| GDPGR does not Granger Cause M2/GDP | | 0.34403 | 0.56205 |
| MC/CPS does not Granger cause GDPGR | 32 | 1.22472 | 0.27753 |
| GDPGR does not Granger cause MC/CPS | | 0.47650 | 0.49550 |
| MRR does not Granger cause CAPGR | 32 | 1.45179 | 0.23798 |
| GAPGR does not Granger cause MRR | | 0.42408 | 0.52003 |
| EXR does not Granger cause GAPGR | 32 | 9.78822 | 0.00398 |
| GAPGR does not Granger cause EXR | | 0.00049 | 0.98249 |
| FDI does not Granger cause GDPGR | 32 | 1.88676 | 0.18009 |
| GAPGR does not Granger cause FDI | | 0.00699 | 0.93392 |

Source: Researchers' E-View.

As revealed by table 4, BSC Granger causes GDPGR (P-Value = 0.02<0.05) is in agreement with theory. However GDPGR does not Granger cause BSC (P-Value = 0.81>0.05). This implies that there is a unidirectional causality between GDPGR and BSC. The EXR Granger causes GDPGR, but not the other way round, equally indicating a uni-directional causality. There is no indication of causality between GDPGR and M2/GDR, CPS/GDP, MC/CPS, MRR or FDI. None of these variables granger causes GDPGR either.

## 4.5 Regression Results
**Table 5: Regression Equation**

Dependent Variable: GDPGR

Method: Least Squares

Sample: 1981 2013

Included observations: 33

| Variable | Coefficient | Std. Error | T-Statistic | Prob. |
|---|---|---|---|---|
| C | 37.437227 | 1.705151 | 19.854348 | 0.0010 |
| BSC | -0.334911 | 0.168739 | -1.984739 | 0.0582 |
| M2/GDP | 1.059443 | 0.608130 | 1.742131 | 0.0938 |
| CPS/GDP | -0.704881 | 0.544150 | -1.295379 | 0.2070 |
| MC/CPS | -3.432784 | 2.634815 | -1.302855 | 0.2045 |
| MRR | 0.013328 | 0.406863 | 0.032757 | 0.1741 |
| EXR | 0.012643 | 0.038283 | 0.330260 | 0.7440 |
| FDI | -0.265237 | 0.658197 | -0.402975 | 0.0704 |

| | | | |
|---|---|---|---|
| R-squared | 0.645475 | Mean dependent  var | 4.782485 |
| Adjusted R-squared | 0.606608 | S.D. dependent var | 6.743567 |
| S.E of regression | 6.266048 | Akaike info criterion | 6.715385 |
| Sum squared resid | 981.5839 | Schwarz criterion | 7.078175 |
| Log likelihood | -102.8039 | F-statistic | 1.723303 |
| Durbin-Watson stat | 1.844765 | Prob (F-statistic) | 0.009022 |

**Source:** Researchers' E-views Results

The result above reveals that the overall regression model is significant and well-fitted. This is evidenced by

the probability of F-statistic (0.009022), which is less than 5%. This result is reliable also because the Durbin-Watson statistic (1.844765) is very significant as it is approximately 2.0000. This means that the regression does not have serial correlation problems. As observed from the result above, the coefficient of BSC is negative and BSC does not have a statistically significant effect on GDPGR {$\alpha$ = -0.334911, t-value = -1.984792 (p-value = 0.0582)}. M2/GDP has a positive and insignificant effect on GDPGR over the period of this study {$\alpha$=1.059443, t-value=1.742131 (p-value = 0.0938)}. CPS/GDP equally has a positive and insignificant effect on GDPGR {($\alpha$ =-0.704881, t-value = -1.295379, (p-value = 0.2070)}. MC/CPS has a negative and insignificant effect on GDPGR {($\alpha$ = -3.432784, t-value = -1.302855; (p-value = 0.2045)}. MRR has a positive and insignificant effect on GDPGR {($\alpha$ = 0.013328, t-value = 0.032757, p-value = 0.1741)}. As for EXR, it has a positive and insignificant effect on GDPGR. {($\alpha$ = -0.266237; t-value = -0.402975, (p-value = 0.0704)}.The $R^2$ is a summary measure of how well a sample regression line fits the data (goodness of fit). From the model above, the $R^2$ value of 0.645475 implies that 65 percentage variations in the dependent variable (GDPGR) was explained by the independent variables (BSC, M2/GDP, CPS/GDP, MC/CPS, MRR, EXR and FDI) and the remaining 35% was explained by variables not included in the model. The adjusted $R^2$ indicates that, after taking account of the number of regressors, the model still explains 61% variation in GDPGR.
The model therefore becomes:
GDPGR = 37.437227 – 0.334911BSC + 1.059443M$_2$/GDP – 0.704881 CPS/GDP-3.432784 MC/CPS + 0.013328 MRR+ 0.012643EXR-0.265237FDI.

## 4.6 Policy Implications
The result of the study has important implications for the financial sector development and Nigeria's economic growth. It shows that the financial sector development had some modest effect on the Nigerian economic growth during the period from 1981 to 2013. It demonstrates that money supply, marginal rediscount rates and exchange rates impact on Nigeria's economic growth positively. On the other hand, banking sector credit, credit to the private sector, market capitalization and foreign direct investment all had negative effect on Nigeria's economic growth during the period. Each of all the explanatory variables has an effect that is statistically insignificant. The result of this study partly agrees with studies like Nwanyanwu (2008), Gross (2001), Guray, et al (2007), Lucas (1998) Stern (1984) and Buffle (1984) which also observe either that the effect of the variables are insignificant, or that there is a total  absence of impact of the variables on economic growth. The result also agrees with Fadare (2010) which notices that some variables exhibit wrong signs.

## 5.0 Conclusion and Recommendation
This study investigates the effect made by the financial sector development on the economic growth of Nigeria during the period from 1981 to 2013. Augmented Dickey Fuller (ADF) Unit Root test, ordinary least squares technique and Granger Causality test were used. The unit root test confirms the stationarity of all the variables used for the study at first difference. Regression result shows that money supply (M2), minimum rediscount rate and exchange rate have positive and insignificant effect on the economic growth of Nigeria. However, the results indicate that banking sector credit, credit to the private sector, market capitalization and foreign direct investment have negative insignificant effect on Nigeria's economic growth. The Granger-Causality test confirms the unidirectional causal relationship of banking sector credit and exchange rate with economic growth. It confirms also that there is no causal relationship between economic growth and money supply, credit to the private sector, market capitalization, marginal rediscount rate and foreign direct investment.

## Recommendations
The following recommendations are therefore, made for policy purpose:
a.      The Nigerian government should continue with her expansionary monetary policy by further increasing the level of money supply. If the increased money supply is used efficiently, it will help to ensure that the desired level of economic growth is achieved. The increase in money supply ought to be reflected in the cost of borrowing because the lower costs of borrowing are likely to induce some desired credit expansion which would, in turn, boost investment activities. Even though this action may be inflationary temporarily, it is more beneficial as its origin is not from high powered money.
b.      Monetary Rediscount Rate should continue to be used as an alternative part of interest rate operating procedures.
c.      Nigerian government should consider encouraging domestic investors first rather than give undue attention to Foreign Direct Investment. After all, FDI impacted negatively and insignificantly on Nigeria's economic growth during the period of this study. Both the Foreign Direct Investment, Market Capitalization and Banking Sector Credit should be managed with caution as their wrong or reckless handling might engender 'wrong signs' which can elicit some negative effect on economic growth.
d.      Nigerian government should continue with her current foreign exchange liberalization policy as it has had a

positive impact on her economic growth during the 33 year period.

e.     Further research should be carried out on this topic by introducing other relevant explanatory variables like size and liquidity of the financial sector for the purpose of generalization. In addition, investigation should be carried out to unravel the reasons why some of the variables introduced in this study have negative effect on economic growth and produce 'wrong signs'.

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## APPENDIX

## SECONDARY DATA FOR IMPACT OF FINANCIAL SECTOR ON ECONOMIC GROWTH: A CASE OF NIGERIA (1981-2013).

| YEAR | GDPGR | BSC | M2/GDP | CPS/GDP | MC/CPS | MRR | EXR | FDI (% OF GDP) |
|---|---|---|---|---|---|---|---|---|
| 1981 | 20.838 | 30.5 | 15.3 | 9.1 | 0.57 | 6 | 0.61 | 0.91 |
| 1982 | -1.053 | 40.1 | 15.6 | 10.6 | 0.47 | 8 | 0.6729 | 0.87 |
| 1983 | -5.05 | 47.8 | 16.1 | 10.6 | 0.49 | 8 | 0.7241 | 1.04 |
| 1984 | -2.022 | 47.4 | 17.3 | 10.7 | 0.45 | 10 | 0.7649 | 0.67 |
| 1985 | 8.323 | 43.4 | 16.6 | 9.7 | 0.5 | 10 | 0.8938 | 1.71 |
| 1986 | -8.754 | 48.7 | 17.7 | 11.3 | 0.52 | 10 | 2.0206 | 0.96 |
| 1987 | -10.752 | 36 | 14.3 | 10.9 | 0.54 | 12.75 | 4.0179 | 2.96 |
| 1988 | 7.543 | 34.3 | 14.6 | 10.4 | 0.47 | 12.75 | 4.5367 | 1.6 |
| 1989 | 6.467 | 20.1 | 12 | 8 | 0.43 | 18.5 | 7.3916 | 7.9 |
| 1990 | 12.766 | 21.9 | 11.2 | 7.1 | 0.49 | 18.5 | 8.0378 | 2.06 |
| 1991 | -0.618 | 21.5 | 13.8 | 7.6 | 0.55 | 14.5 | 9.9095 | 2.61 |
| 1992 | 0.434 | 30.8 | 12.7 | 6.6 | 0.54 | 17.5 | 17.2984 | 2.74 |
| 1993 | 2.09 | 39.2 | 15.2 | 11.7 | 0.37 | 20 | 22.0571 | 6.3 |
| 1994 | 0.91 | 46.4 | 16.5 | 10.2 | 0.45 | 13.5 | 21.8861 | 8.28 |
| 1995 | -0.307 | 23.6 | 9.9 | 6.2 | 1 | 13.5 | 21.8861 | 3.84 |
| 1996 | 4.994 | 13.3 | 8.6 | 5.9 | 1.24 | 13.5 | 21.8861 | 4.51 |
| 1997 | 2.8 | 12.6 | 9.9 | 7.5 | 0.91 | 13.5 | 21.8861 | 4.25 |
| 1998 | 2.716 | 18.2 | 12.2 | 8.8 | 0.75 | 14.31 | 21.8861 | 3.27 |
| 1999 | 0.474 | 19.1 | 13.4 | 9.2 | 0.7 | 18 | 92.6934 | 2.89 |
| 2000 | 5.318 | 10 | 13.1 | 7.9 | 0.89 | 13.5 | 102.1052 | 2.48 |
| 2001 | 8.164 | 19.3 | 18.4 | 11.1 | 0.87 | 14.31 | 111.9433 | 2.48 |
| 2002 | 21.177 | 19.5 | 19.3 | 11.9 | 0.82 | 19 | 120.9702 | 3.17 |
| 2003 | 10.335 | 21.2 | 19.7 | 11.1 | 1.24 | 15.75 | 129.3565 | 2.96 |
| 2004 | 10.585 | 11.7 | 18.7 | 12.5 | 1.86 | 15 | 133.5004 | 2.13 |
| 2005 | 5.393 | 8.6 | 18.1 | 12.6 | 1.58 | 13 | 132.147 | 4.44 |
| 2006 | 6.211 | 4.9 | 20.5 | 12.3 | 2.23 | 12.25 | 128.6516 | 3.34 |
| 2007 | 6.972 | 19.2 | 24.8 | 17.8 | 3.59 | 8.75 | 125.8331 | 3.64 |
| 2008 | 5.984 | 26.6 | 33 | 28.5 | 1.38 | 9.81 | 118.5069 | 3.96 |
| 2009 | 6.96 | 37.1 | 38 | 36.7 | 0.77 | 7.44 | 148.8802 | 5.07 |
| 2010 | 8.724 | 18.8 | 20.4 | 18.7 | 0.95 | 6.13 | 150.298 | 2.65 |
| 2011 | 7.4 | 22.1 | 19.2 | 15.9 | 0.96 | 9.49 | 153.8616 | 3.62 |
| 2012 | 6.6 | 20.8 | 19.5 | 20.6 | 0.89 | 12 | 157.4994 | 0 |
| 2013 | 6.2 | 22.3 | 18.9 | 19.7 | 1.21 | 12 | 157.3112 | 0 |

**Source:** Central Bank of Nigeria statistical bulletin (2013 edition) and international monetary fund's world economic outlook (2013).